## REMARKS

Claims 2 and 4-49 are pending. Applicants appreciate the indication of patentable subject matter in claims 8-17 and 27-36. However, Applicants assert that all of the claims are directed to patentable subject matter for the reasons set forth below.

The Office Action again rejects claims 2, 4-7, 18-26 and 37-48 under 35 U.S.C. §103 (a) over Hanko (United States Patent No. 6,493,041) in view of Tumer (United States Patent Pub. No. 2004/0017224). Applicants respectfully traverse this rejection.

### Claims 43-49, 2, 4-23 Contain Further Patentable Subject Matter

In particular, Applicants assert that it would not have been obvious at the time of the invention to teach or suggest a miniature autonomous apparatus for scene interpretation that includes a digital camera for producing an image of a scene and a processor associated with the camera, said processor adapted to run at least a dynamic range control process and an image processing detection process, wherein the dynamic range control process includes a plurality of changeable dynamic range settings for the camera, and is in communication with the image processing detection process such that when dynamic range is changed, the image detection process adapts itself to the new dynamic range setting, as is recited in independent claim 43.

Hanko discloses a method and apparatus for the detection of motion using a video camera. See, Abstract. As shown in Fig. 1, a video camera 110 is coupled to a digitizer/decoder 130, which is further coupled to a number of other components 140-200. However, as is admitted in the Office Action on page 3, Hanko does not teach a "*DRC process in communication with a detection process for adapting the detection the*

*detection process to changed dynamic range settings of a camera.*" Accordingly, Hanko does not teach or suggest each and every feature of independent claim 43.

Tumer discloses an integrated circuit, known as the "RENA-2 chip", which includes an image sensor and associated support circuitry which has "*much lower noise, and thus much improved noise and image resolution.*" See, Abstract and par [0016]. As is stated in par [0017], the design of the RENA-2 chip is guided by two principal goals including: (1) making the chip versatile; and (2) obtaining "*obtaining the best resolution possible [by achieving] the lowest possible noise consistent with the characteristics of the detectors with which the ASIC is intended to use.*"

Tumer does not teach a DRC process in communication with a detection process for adapting the detection the detection process to changed dynamic range settings of a camera, as is recited in independent claim 43.

To the contrary, nowhere does Tumer teach, suggest or even appreciate a DRC process in communication with a detection process, much less a detection process that adapts itself based on changed dynamic range settings of a camera. A review of Tumer shows that any description of DRC is limited to paragraphs [0015], [0019], [0021] and [0075]-[0077].

Applicants note that paragraph [0015] merely mentions that the RENA-2 chip "*can have different dynamic ranges*;" paragraph [0019] merely mentions that the RENA-2 chip has "*new innovative features, such as user-selectable dynamic ranges*"; and paragraph [0021] merely mentions that the RENA-2 chip has "*user-selectable dynamic ranges.*"

Applicants further note that paragraph [0075] merely mentions that the RENA-2 chip "*is adjustable or selectable*," and that one way to achieve a controllable dynamic range is "*to make the circuit components that control the dynamic range to be switchable, [such as] controlling the dynamic range through an externally supplied voltage or current*."

Finally, Applicants note that paragraph [0076] merely discusses problems associated with the dynamic range of the RENA-2 chip's predecessor, which had no adjustable dynamic range, and paragraph [0077], which discusses a remedy (multiple DACs) to solve the problem discussed in paragraph [0076].

While the non-final Office Action asserts on page 3 that Tumer "*teaches an image processor including a circuit component that control the dynamic range settings to be adjustable and switchable*", Applicants respectfully point out that the non-final Office Action does not address the claim language of claim 43, which not only requires an adjustable dynamic range, but also (1) a dynamic range process in communication with a detection process, and (2) a detection process that adapts itself based on different settings of the dynamic range process. **Tumer discloses neither of these claimed features**.

While, the subsequent final Office Action at least makes an assertion to the contrary, the final Office Action provides no passage in Tumer to actually support such assertions. That is, **Applicants respectfully again point out that the Office Action has not provided each and every limitation of independent claim 43.** All claim limitations must be taught or suggested. See, In re Royka, 490 F.2d 981, and MPEP §2143.03.

While the Final Office Action states on page 3 that "*Tumer clearly teaches the dynamic range with respect to the RENA chip is adjustable and selectable to meet the requirements of various experiments thus the detection process will adapt itself based on the DRC*", Applicants respectfully point out that, other than the dynamic range of the RENA chip being adjustable, **this statement is factually incorrect**.

That is, it is clear and undisputable from the text of Tumer that the only statement made about the RENA-2 chips method of controlling dynamic range (other than it being "adjustable or selectable") is that "*circuit components that control the dynamic range to be switchable*" can be made (paragraph [0075]) and that RENA-2 chip incorporates user-selectable dynamic ranges (paragraphs [0019] and [0021]).

**Paragraphs [0019], [0021] and [0075] constitute the totality of Tumer's discussion of how the RENA-2 chip's dynamic range may be controlled, and neither the non-final Office Action nor the final Office Action has cited a single line from Tumer showing otherwise.**

While the Final Office Action further states on page 4 that "*Tumer clearly teaches the use of DRC ... to meet the requirements of various sensors,*" this statement fails to account for the specific claim language proffered by the Applicants, i.e., that Tumer doesn't disclose an image detection process responsive to the DRC process such that when dynamic range is changed, the image detection process adapts itself to the new dynamic range setting.

Thus, as neither Hanko nor Tumer suggests any detection process that adapts itself based on different DRC settings, the incorporation of Tumer's adjustable DRC into Hanko is insufficient to satisfy the requirements of 35 USC §103(a). That is, even assuming that

there is every reason to combine any features of Hanko and Tumer in any fashion, or to modify Hanko using any teaching of Tumer, there can be no combination that could read on the claimed subject matter.

**Further, the Office Action has not provided the necessary motivation to modify Hanko using the teachings of Tumer.** While the Final Office Action further states on page 4 by "*allowing the DAC range and resolution to be adjustable to the requirements of different experiments it would have been obvious to one of ordinary skill in the art to use the DRC (RENA-2) in Hanko el al controller in order to take advantage of the observation that the degree of the variation in pixel value that occurs in frame to frame due to noise tends to be fairly well defined and consistent in order to eliminate the effects of noise*", this statement is directed to lowing noise and variations that may influence an effective dynamic range, but not how to control dynamic range.

While the final Office Action also states that "*the references are properly combinable and had expanded on the motivation since the adjusted dynamic range of Tumer that includes the RENA-2 chip can be incorporated in Hanko video camera since the invention is able to dynamically adapt to a variety of different conditions and circumstances*" (citing col. 7, line 17-35 of Hanko), **nowhere does the cited passage make such assertions**. In fact, the cited passage at most stands for the prospect that "*it is important that changes in lighting are not confused with motion*" (col. 7, lines 17-20) and that some "reference frame" should be chosen to avoid confusing "*significant motion from other artifacts[.]*" See, col. 7, lines 20-35.

Applicants respectfully point out the very passages (of Hanko) cited by the Office Action not only fail to discuss the need or utility to use dynamic range control to avoid

confusing significant motion from other artifact, but clearly states that Hanko relies instead on the use of reference frames and thus, has no need of DRC.

As reference frames are used to provide a baseline of video information, Applicants also point out that dynamic range control would interfere with this process as dynamic range control changes the underlying reference for every pixel, and the application of dynamic range control would require extensive and expensive processing to compensate for a problem that doesn't even appear to exist with Hanko's reference frame approach. For instance, the video frame difference counter of col. 8, lines 61-68 would need to be completely redesigned in some manner or replaced by some unidentified component by the application of DRC.

Ergo, Applicants again respectfully point out that Hanko does not use DRC, will not benefit from a DRC, **and that a DRC may likely cause more problems than may be solved.** Thus, the addition of a DRC would require substantial changes to other circuitry, and given that those changes are undefined, the suggested changes would not only require fundamental changes to components (contrary to the new requirements issued by the USPTO for KSR v. Teleflex), but there can be no likelihood of success of the modified product (also contrary to the requirements issued by the USPTO for KSR v. Teleflex).

Continuing, while the Final Office Action states that "*applicants argue that Hanko system cannot employ the Tumer changeable dynamic range setting for the camera wherein the image detection process adapts itself to the new dynamic range setting*", Applicants again point out that, for the system of Hanko where the source is stored media, it is impossible to consider the dynamic range of the camera since at this stage the camera is no longer operating. There is no detection process that may be influenced by a DRC if a

detector is not in use. Therefore dynamic range control is irrelevant with regard to the configuration of the system as disclosed by Hanko. As for instances of Hanko where the source might be a camera in operation, Applicants point out that this would require completely different processing circuitry from the previous instance of using a stored source of video data, which would add to the expense of a camera for a device where Hanko claims no problem that cannot be solved using its reference frame approach.

And still further, Applicants' respectfully point out that Turner's RENA-2 chip is designed for instrumentation. As with every measurement instrument, the measurement process is precise and fixed, and certainly does not change or adapt itself to changes in the signal being measured – the whole idea of a measuring instrument is that the measurement be as objective and unchanged as possible, and report with high precision the changes that occur in the measured signal. Applicants again point to paragraph [0021], which speaks to a "*New, innovative features include low noise, self resetting charge sensitive input amplifier, selectable multi-range shaper,* ***user-selectable dynamic ranges****, fast trigger output for coincident event detection and the ability to provide channel-by-channel time difference information.*" In plain language, this means that if one wishes to use Turner's instrument to measure astrophysics, she will pre-select the appropriate dynamic range for that application: if, on the other hand, she will wish to use it for nondestructive inspection (NDI), a different dynamic range would be selected. Nothing more! Nowhere does Turner disclose, suggest or even appear to remotely appreciate an provision for adaptability, and certainly not a DRC algorithm, because the dynamic range is never changed during activity outside of initial calibration.

Therefore, the Office Action has not established a *prima facie* case of obviousness. Thus, independent claim 43 is directed to patentable subject matter, and its dependent claims are also directed to patentable subject matter both for their dependency as well as for the additional features they recite. Accordingly, withdrawal of the rejection under 35 USC §103(a) is respectfully requested.

**Claims 24-42, 44, 46, 2, 4-5 and 7-23 Contain Further Patentable Subject Matter**

In particular, Applicants assert that it would not have been obvious at the time of the invention to teach or suggest a method of a miniature autonomous apparatus that includes determining an initial parametric representation of [a] scene, as is recited in claims 24, and similarly recited in dependent claims 44 and 46.

While the final Office Action states on page 5 that Hanko teaches an apparatus "*configured to determine an initial parametric representation of the scene and to continuously update said parametric equation (each pixel located in an image is accurately and repeatedly measured and a "value" is assigned to each pixel[])]*. Citing col. 5, lines 60-65 of Hanko, Applicants point out that the cited passage is nothing more than a straight-forward color digitization of a pixel. That is, the cited passage may be described as acquiring an image of a scene pixel-by-pixel, but it is not determining any form of parametric representation of a group of pixels that may constitute a scene.

While the final Office Action further cites col. 8, lines 61-67 of Hanko for determining an initial parametric equation of a scene and updating such parametric representation, Applicants respectfully point out that the specific text proffered by the final Office Action speaks merely to the selection of reference frames, not to any

parametric representations of frames. As with col. 5, lines 60-65, this passage at best speaks to acquiring an image of a scene, not to producing parametric equations of scenes.

**Further, Applicants point out that the terms "parametric", "parameter" and "equation" (or their equivalents) are nowhere to be found in Hanko.**

Therefore, the Office Action has not established a *prima facie* case of obviousness. Thus, independent claim 24 and dependent claims 44 and 46 are directed to patentable subject matter, and dependent claims 25-42 are also directed to patentable subject matter both for their dependency as well as for the additional features they recite. Accordingly, withdrawal of the rejection under 35 USC §103(a) is respectfully requested.

## Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited. Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is welcomed to contact the undersigned attorney at the below-listed number and address.

In the event this paper is not timely filed, Applicants petition for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 14-0112.

Respectfully submitted,

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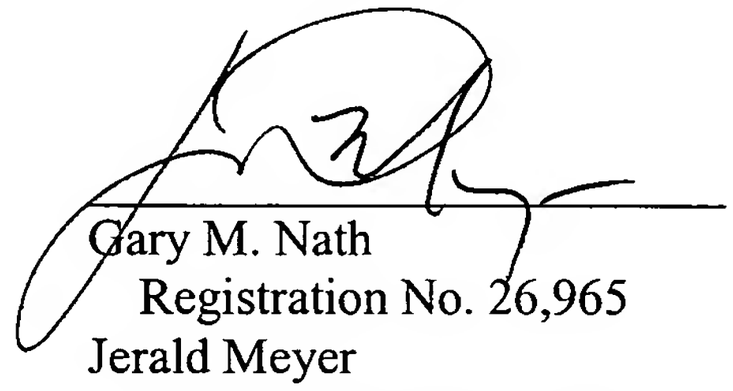

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